

**REMARKS**

Claims 1, 4, 12 and 20-34 are pending in this application. By this Amendment, claims 12, 26 and 28-30 are amended; and claims 31-34 are added.

Applicant gratefully acknowledges that the Office Action indicates that claims 1, 4, 20 and 21 are allowed.

**I. THE CLAIMS SATISFY ALL FORMAL REQUIREMENTS**

The Office Action objects to claims 24, 25 and 30 for informalities. In response, the informalities for claims 24 and 25 are corrected in claim 12, and claim 30 is amended to obviate the objection. Withdrawal of the claim objection is respectfully requested.

**II. THE CLAIMS SATISFY THE REQUIREMENTS UNDER 35 U.S.C. §112, FIRST PARAGRAPH**

The Office Action rejects claims 12 and 22-30 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. This rejection is respectfully traversed.

**Claim 12**

Regarding claim 12, the claim complies with the written description requirement. The first embodiment is disclosed at page 4, line 8 through page 8, line 8. The second and third embodiments are disclosed as modified embodiments. The first embodiment is merely one example structure of a semiconductor device in which an impurity concentration of the channel region is equal to or <sup>1121st</sup>less than an impurity concentration in the drift region, and a depletion layer forms over the entire channel region sandwiched between the gate region when a zero bias is applied to the gate region. The second and third embodiments also include, as a matter of the fact, the structure that an impurity concentration of the channel region is <sup>1121st</sup>equal to or less than an impurity concentration in the drift region, and a depletion layer forms over the entire channel region sandwiched between the gate region when a zero

bias is applied to the gate region. The semiconductor devices of the second and third embodiments include such structure. The disclosure "construction of the present (third) <sup>← fig. 10</sup> embodiment differs from that the above-mentioned embodiment (the first or second embodiment) in that a source region 220 is formed at almost a center of a p-type channel region 215" (page 9, lines 1-3) indicates that the third embodiment includes the same construction as the first or second embodiment, but further comprises a source region 220 formed at almost a center of a p-type channel region 215. See, for example, the specification at page 2, lines 21-24.

For at least these reasons, it is respectfully submitted that claim 12 complies with the written description requirement.

#### **Claim 22**

Regarding claim 22, the Office Action asserts that the specification never discloses that the embodiment of Fig. 10B includes a gate region of the first conductive type (n-type). Applicant respectfully traverses the claim rejection. The specification, however, explains that the gate region may be n-type (page 4, line 14), or may be p-type (page 5, line 17). The gate region of the third embodiment may have the gate region of n-type or p-type. Claim 22 defines the gate region of n-type (the first conductive type).

For at least these reasons, Applicant respectfully submits that claim 22 does comply with the written description requirement.

#### **Claims 24 and 25**

Regarding claims 24 and 25, the Office Action asserts that the specification never discloses that the embodiment of Fig. 10B includes at least a part of the source electrode forming a Schottky junction with the channel region. This assertion is respectfully traversed. The specification clearly discloses that, as a modified first embodiment, it is favorable to form a Schottky junction between the source electrode and the channel region. The third

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embodiment merely shows a construction in which the source region is located substantially at a center of the channel region, but includes the same or similar construction as the first embodiment or the other. Thus, Applicant respectfully submits that claims 24 and 25 comply with the written disclosure requirement. Claims 32 and 33 as added relate to Figs. 7A-7C.

**Claim 26**

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As amended, claim 26 recites "one of the first and second conductive types." The embodiment of Fig. 8 discloses the semiconductor device comprising semiconductor layer 100 of n-type which is located between the source region 20 and the source electrode 22.

For at least these reasons, Applicant respectfully submits that claim 26 complies with the written description requirement.

**Claim 30**

Regarding claim 30, the claim is amended to obviate the rejection. Claim 31 as added is supported by "a low concentration p-type anode region" as recited at page 10, line 32. The impurity concentration in the anode region 537 is equal to or less than the impurity concentration in the cathode region 534. Claim 34 as added relates to Figs. 11A and 11B.

For at least these reasons, it is respectfully submitted that claim 30, and well as new claims 31 and 34, comply with the written description requirement.

Withdrawal of the rejection under 35 U.S.C. §112, first paragraph, is respectfully requested.

**III. THE CLAIMS SATISFY THE REQUIREMENTS  
UNDER 35 U.S.C. §112, SECOND PARAGRAPH**

The Office Action rejects claims 28 and 29 under 35 U.S.C. §112, second paragraph, as being indefinite. In response, claims 28 and 29 are amended to obviate the rejection.


Withdrawal of the rejection under 35 U.S.C. §112, second paragraph, is respectfully requested.

**IV. CONCLUSION**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 4, 12, and 20-34 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

  
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Attachment:  
Drawing Sheet (Figures 10A-11B)

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